

## DETAILED ACTION

### ***Allowable Subject Matter***

1. Claims 10, 12, and 14-17 are allowed.
2. The following is an examiner's statement of reasons for allowance:

Examiner believes the claims are in condition for allowance after careful review of the arguments presented in the Remarks from 07/11/2011, for example:

*"The Office Action points to Column 10, lines 25-45, of Paik as describing an "end-of-sentence detection module." Applicants respectfully submit, though, that while Paik may describe determining an end of a sentence, Paik does not describe determining the location of a definite article within a sentence. Identifying definite articles in Paik is location agnostic in relation to its position in the sentence.*

*Applicants further respectfully submit that Boguraev in view of Chase and Paik does not at least describe "... each feature term may have a modifier describing the feature term, and the identifying includes for each sentence having a verb phrase where the verb phrase has no matching entry in the opinion dictionary, assigning an opinion polarity of the modifier of the feature term to the feature term, the opinion polarity of the modifier being defined in the opinion dictionary..." {emphasis added}. Chase does not describe or suggest each and every sentence being analyzed having a verb phrase with no matching entry in the opinion dictionary" – Remarks*

After further consideration, Examiner agrees and believes that the prior art taken alone or in combination fails to teach:

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“determining from the document feature terms related to the features most relevant to the subject, comprising:

determining a definite article is located at the beginning of a sentence in the plurality of sentences; and

determining the definite article precedes the feature term

wherein the determining comprises:

identifying an opinion polarity associated with said feature term using the opinion dictionary, wherein:

the grammatical components include verb phrases, subject phrases, object phrases, complements, and prepositional phrases, and each feature term may have a modifier describing the feature term, and the identifying includes for each sentence having a verb phrase where the verb phrase has no matching entry in the opinion dictionary, assigning an opinion polarity of the modifier of the feature term to the feature term, the opinion polarity of the modifier being defined in the opinion dictionary”

3. Further, arguments directed to claims 10, 12, and 14-17 were considered in light of the specification and is believed to overcome the current references used for rejection, particularly the closest:

A)	US 6185592 B1	Boguraev et al.	20010206
B)	US 6332143 B1	Chase	20011218

C)	US 6076088 A	Paik et al.	20000613
D)	US 5870700 A	Parra	19990209

Examiner finds that reference A) is analogous to the present invention, wherein reference A) teaches providing content of a summary like output to describe an accurate representation of a document. However reference A) is primitive with respect to grammar, wherein there is no meaning or grammar, present, let alone extracted from any text, such as a polarity. Assuming *arguendo* that grammar is somehow inherent in reference A), there is still a failure to teach or suggest any relationship to "definite articles" whatsoever as well as the existence of whether or not a verb phrase has an opinion polarity. Additionally, even if these limitations were to further exist in reference A), the opinion polarity or opinion terms as defined in the present invention are related to opinions that are present within a document from individual phrases and *not* just the overall context as in reference A). Therefore, while pertinent, reference A) severely lacks the above allowable limitations.

Reference B) teaches the determination of emotion such as negative or positive reactions present in a document or text passage, such as "worry", "sorrow", "grief", etc, however reference B) like A) lacks any intelligent analysis of grammar. However, reference B) does make mention of articles, conjunctions, and forms of verbs i.e. "to be", but in fact teaches the exclusion of this type of content. Therefore, assuming *arguendo* that the exclusion is a form of initial identification, the combination of A) and

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B) would still fail to teach or suggest the existence of whether or not a verb phrase has an opinion polarity. At best reference B) merely identifies a verb (no verb phrase) and simply discards it. The combination of reference A) and B) at best teaches an overall opinion and opinion terms of a document. Additionally, the combination of A) and B) are not directed to grammar or mechanics of discourse but rather content and quality of discourse. For example, the concept of parsing seems to be absent from A) and B) with respect to opinion extraction within the above allowable limitations. A) and B) simply lack grammatical functions.

Reference C) improves the combination of A) and B) to teach a grammatical analysis of discourse while still being analogous with respect to content or summarization. For instance "paying" and "overdue" are identified as concepts for topic extraction. Further, reference C) describes modifiers within a sentence such as a verbal compliment, wherein C) closely reads the upon the allowable subject matter from the *broadest* sense, for example "the grammatical components include verb phrases, subject phrases, object phrases, complements, and prepositional phrases". The existence of a definite article is still lacking in C), although C) does teach linguistic patterns that could signal the beginning and end of sentences. For the sake of argument, say that a general "article existed" let alone a definite article, like Applicant has pointed out, these articles are still *irrelevant to location in relation to its position in the sentence*. Further, assuming arguendo that "determining a definite article is located at the beginning of a sentence in the plurality of sentences" exists in C), there is no

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teaching or suggestion that would render obvious determining comprising identifying such as identifying an opinion polarity associated with said feature term using the opinion dictionary, wherein each feature term may have a modifier describing the feature term, and the identifying includes for each sentence having a verb phrase where the verb phrase has no matching entry in the opinion dictionary, assigning an opinion polarity of the modifier of the feature term to the feature term, the opinion polarity of the modifier being defined in the opinion dictionary. The combination of A) - C) at best describes a dynamic system that considers discourse content and grammar which has the ability to extract overall content and learn new terms in relation to a users query. The combination does not teach how to handle any type of phrase with no matching entry in an opinion dictionary

Reference D) is the most pertinent with respect to “determining a definite article is located at the beginning of a sentence in the plurality of sentences”, where D) explicitly teaches definite articles that may indicate the beginning of a noun phrase for instance. However, D) is non analogous with respect to a topic or summary of text documents or individual sentences. If D) were to be somehow combined with A) - C), it would be to modify the grammatical operations of C), but is irrelevant to user query analysis. Instead D) is used to generate grammar rules from text, it does not analyze multiple text documents with an already existing grammar. At best D) improves definite article identification, however there is no teaching or suggestion that would render obvious determining comprising identifying such as identifying an opinion polarity

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associated with said feature term using the opinion dictionary, wherein each feature term may have a modifier describing the feature term, and the identifying includes for each sentence having a verb phrase where the verb phrase has no matching entry in the opinion dictionary, assigning an opinion polarity of the modifier of the feature term to the feature term, the opinion polarity of the modifier being defined in the opinion dictionary.

Overall, the teachings of A) – D) teach individual elements of the claims language, but Examiner can find no art that combines the element in the precise manner that the claims do with respect to grammar and opinion extraction for phrases. While pieces of the claim are taught, overall the combination of A) - D) would not render obvious the claim as a whole to one of ordinary skill in the art. Further, given the broadest interpretation, the combination does not teach how to handle phrases (let alone verb phrases) with no matching entry in an opinion dictionary. If a *piece-wise* combination were somehow justified given A)'s content, B)'s emotional extraction, C)'s grammatical query search and learning, and D)'s grammar checker to handle articles and sentence ending/beginning... **at the very least**, as pointed out by Applicant's Remarks, the references A) – D) in any order do not teach:

“determining from the document feature terms related to the features most relevant to the subject, comprising:

determining a definite article is located at the beginning of a sentence in the plurality of sentences; and

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determining the definite article precedes the feature term

each feature term may have a modifier describing the feature term, and the identifying includes for each sentence having a verb phrase where the verb phrase has no matching entry in the opinion dictionary, assigning an opinion polarity of the modifier of the feature term to the feature term, the opinion polarity of the modifier being defined in the opinion dictionary”

When searching for additional prior art for the limitation as recited in claim 10 the most relevant topics pertained to material from the same Inventor and Assignee but did not teach or suggest the aforementioned limitation of claims 10, 12, and 14-17. Further, all claims dependent on claim 10 are allowed because they further limit their respective parent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL COLUCCI whose telephone number is (571)270-1847. The examiner can normally be reached on 9 am - 6:00 pm , Monday - Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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